

successful in hairs that had been kept for a period of weeks folded in paper, nor in nineteen cultivations attempted with hairs taken from patients under treatment. The negative value of these latter experiments is diminished by the occasional failure with hairs freshly extracted from untreated cases.

The fact that the spores of the *Trichophyton* will not grow when immersed in vitreous humour, whilst they do grow when only moistened by it, explains why inflammatory exudation from the blood-vessels cures ringworm of the scalp.

III. "On *Bacterium decalvans*: an Organism associated with the Destruction of the Hair in Alopecia areata." By GEORGE THIN, M.D. Communicated by Professor HUXLEY, Sec. R.S. Received February 19, 1881.

(Abstract.)

The author having in several cases of Alopecia areata found bacteria adherent to the roots of extracted hairs, subjected hairs in six selected cases to processes designed to demonstrate the existence of organisms, should they be present, in the substance of the diseased hairs.

In five out of the six cases an object was observed in the hairs which he believes to be a bacterium. It was seen as a rounded or elongated spheroid, and was found frequently in pairs, the long diameter of the two spheroids forming a continuous straight line. Sometimes three were found in line, a delicate rod-shaped sheath enveloping the three. These bodies were, as was shown by the processes to which the hairs were subjected, neither oily particles nor crystals, and they could be distinguished from the granules always present in hairs. In all the cases their size and form were the same, and they had the refractive qualities of bacteria.

In hairs which were only slightly affected they were found between the inner root-sheath and the hair-shaft, and in small clusters on the hair-shaft beneath the cuticle of the hair. In hairs which were much diseased they were found in great numbers inside the cuticle of the hair, in the disintegrated hair substance.

Some hairs were found split into ribbon-like bands not far from the root and the organisms were found on the bands.

They were found only in the part of the hair which is under the surface of the skin, and most abundantly not far from the root.

In seven consecutive cases the disease was at once and definitely arrested by a treatment designed to destroy the vitality of any bacteria which might be present on the surface of the skin, and at the same

time to present a mechanical obstacle to their progress in growth from one hair follicle to another.*

IV. "On the Absorption of Pigment by Bacteria." By GEORGE THIN, M.D. Communicated by Professor HUXLEY, Sec. R.S.
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Whilst occupied with cultivation of ringworm hairs in vitreous humour at a temperature of 92 to 98° F., I had occasion to observe in studying the hairs under the microscope, amongst the forms of bacteria which were invariably found in these cultivations, certain appearances that seem worthy of note.

For the present, I shall limit my remarks to one of these appearances.

It is known that certain fungi possess the property of taking up colouring matter from the medium in which they grow; and I have had occasion to observe in the *Trichophyton tonsurans* that both in man and in the horse the fungus may acquire a dark colour from absorbed pigment.

In the case of the horse, I have found the mycelial wall represented by an apparently empty dark tube; and I have found, at the same time, spores blackened with a coating of pigment.

I have found an analogous appearance in bacteria.

The bacteria found in these cultivations are seen in the transition forms of a spore or coccus, an elongating spore, rods, elongated rods, sometimes of great length, long rods, with the first appearance of a differentiation of the protoplasm into sporules, and finally as tubes full of spores or cocci.

These appearances have been now followed in several specific organisms, and notably, and first of all, in the *Bacillus anthracis*. They would seem to indicate the ordinary life-history of at least many bacteria.

I observed that frequently the preparations contained long bacteria rods which had taken up pigment from the hair. This pigment was often found at one end of a long rod, whilst towards the other end the rod was free from it; and in the part of the rod in which the pigment was found the spore formation could, in several instances, be

* As treatment which is destructive of bacteria would also arrest the development of a fungus, it is desirable to add that in none of these cases, nor in previous ones, was the author able to find the fungus described by Gruby, although a large number of hairs were examined. The examinations thus made were so exhaustive that he can only explain the alleged existence of a fungus in this disease by assuming that the distinction between Alopecia areata and some of the forms of ringworm has not been always kept in view.